Question #78166:

a swimmer dives into a pool 10m deep.calculate the absolute pressure there (density of water = 99kg/m3*,g=9.81m/s2.atmospheric pressure =101.325kgpa

Solution:

*Let's correct the density of water to 997 kg/m3 (at 25°C).
Absolute pressure:

$P_{abs} = P_{water} + P_{atm}$, where P_{water} – pressure of layer of water (Pa), P_{atm} – atmospheric pressure (Pa);

$P_{water} = \rho \cdot H \cdot g$, where ρ — density of water (kg/m^3), H — height of liquid column or depth (m);

$P_{abs} = \rho \cdot H \cdot g + P_{atm} = 997 \cdot 10 \cdot 9.81 + 101\,325 = 199\,130.7$ [Pa] = 199.1307 [kPa]

Answer: 199.1307 kPa